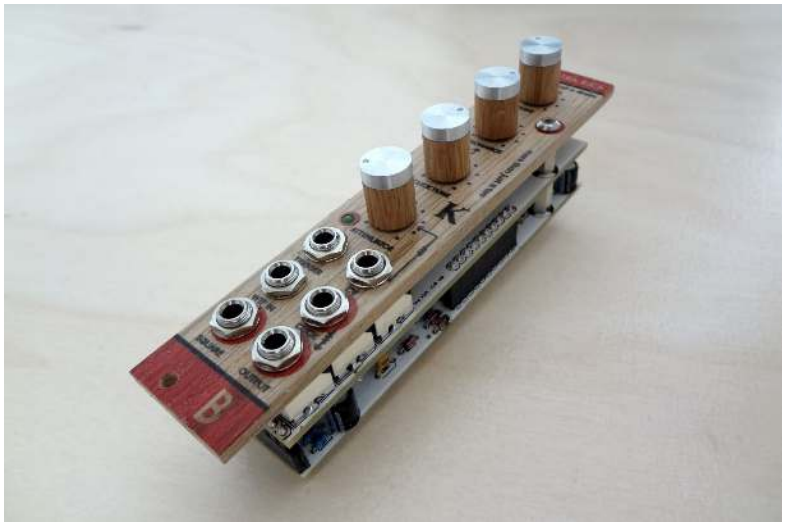


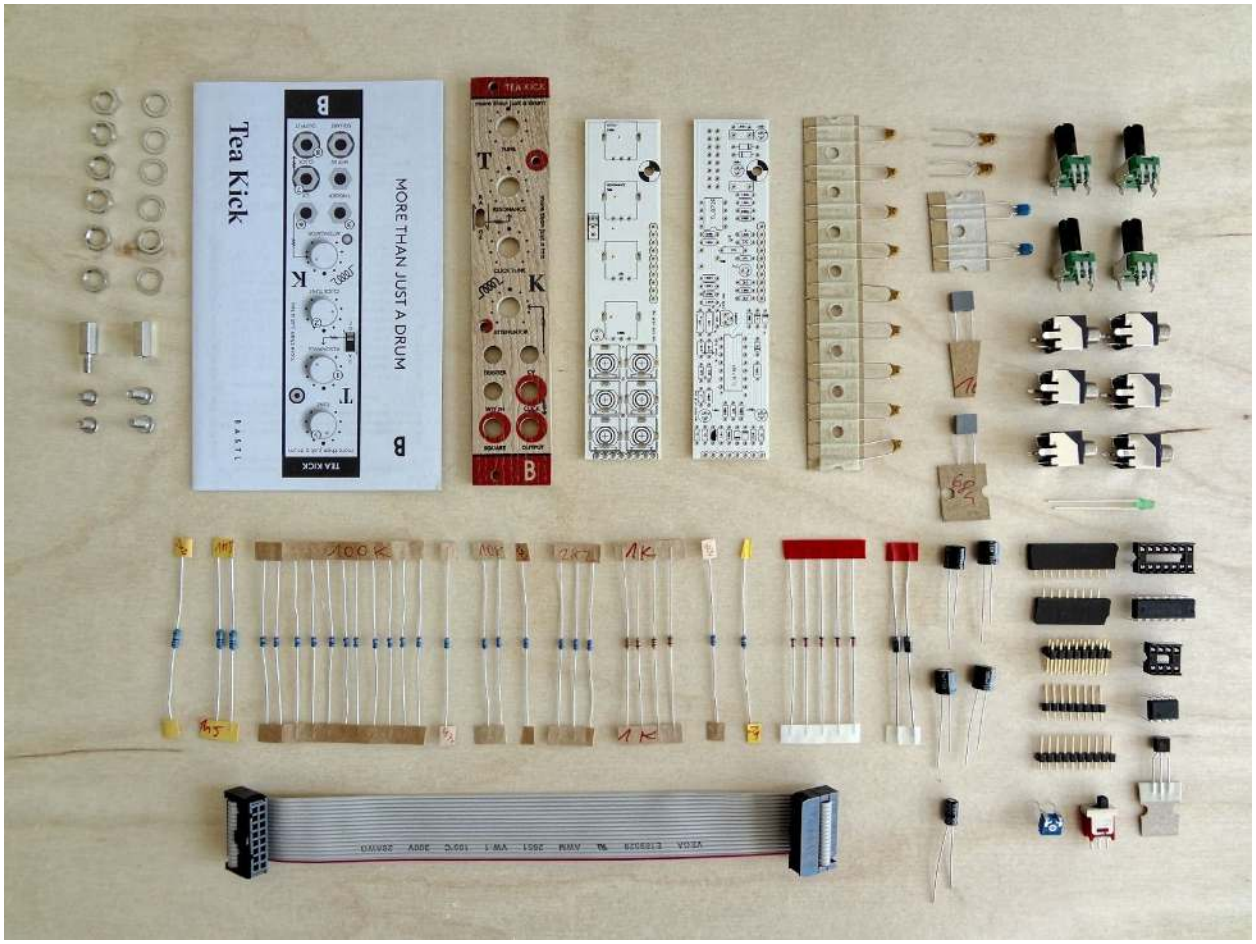
TEA KICK v1.0 Assembly

Before starting this kit, prepare the following tools: Soldering iron (15-20W will do), flush cutters, small hex screwdriver or allen key and phillips screwdriver. Also briefly go through this guide and make sure that you understand all the steps, if you are having any troubles don't hesitate to seek help at the forum. We suggest that you work in a clean and a well lit environment to avoid accidents or losing any of the small components.

IMPORTANT!

If you have never soldered before, check out this great tutorial first.

And please check that your boards are the same version as this guide and that your kit contains the following items:



BOM - bill of materials

2 x 10k resistors	1 x 68n capacitor	1 x TL74 IC
11 x 100k resistors	2 x 6,8n capacitor	1 x Switch
2 x 1M5 resistors	5 x 1N4148 diodes	2 x 100mA fuses
4 x 1k resistors	2 x 1N4007 diodes	1 x diffused green LED
1x 1M resistor	6 x jack connectors	1 x 14 pin DIL socket
1 x 220 resistor	1 x 2N3904 transistor	1x 8 pin DIL socket
1x 22k resistor	1 x 10k linear pots	1 x 2x8 Ribbon cable
1 x 2M2 resistor	1 x 50k linear pots	4 x Knobs
3 x 2k2 resistors	2 x 100k linear pots	2 x PCBs

1 x 47k resistor	1 x 50k trim pot	1 x Wooden panel
4 x 100uF electrolytic capacitors	1 x 2x8 male pin header	6 x Jack washer and nuts
9 x 100nF ceramic capacitor	1 x 18 male pin header	2 x 6mm Hex screws
1 x 10n capacitor	1 x 18 female pin header	2 x 8mm Phillips screws
1 x 2,2u electrolytic capacitor	1 x TL72 IC	1 x 11mm spacer nut
1 x 10mm spacer nut - screw		

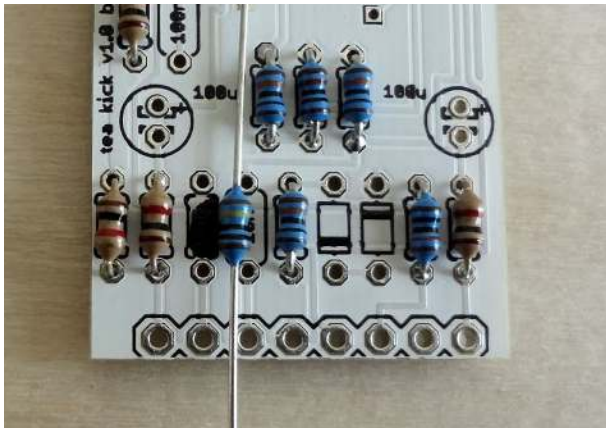
The TEA KICK module consists of two boards, the top board is used for all of the UI components and the bottom board is the heart of the sound generating circuit.

Bottom board

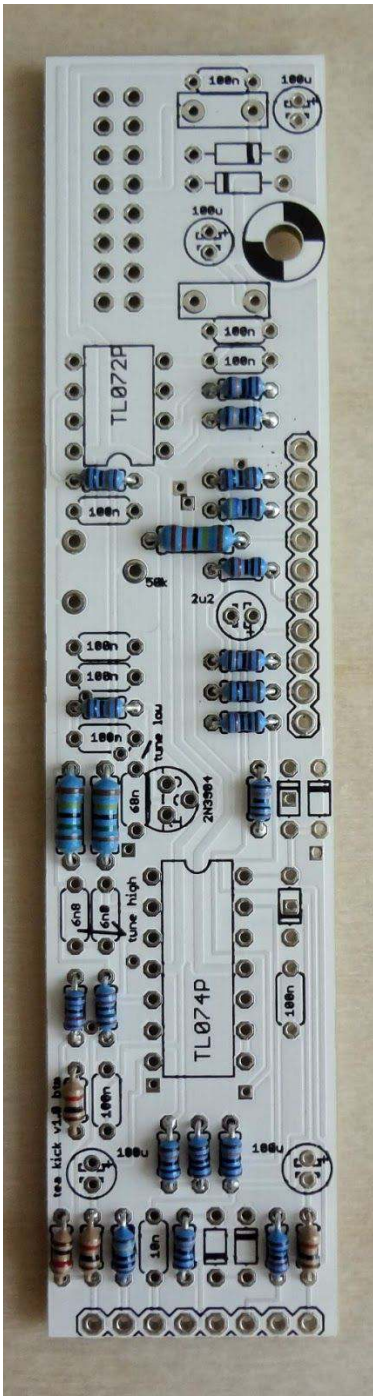
Lets start with the bottom board, with the shortest and smallest parts.
Take a strip of resistors and look up the values printed on the circuit boards. Start with the 100K, since there are 10 of them it will be easier to locate the rest on the board. Place them through the board, solder them and clip off the excess leads.

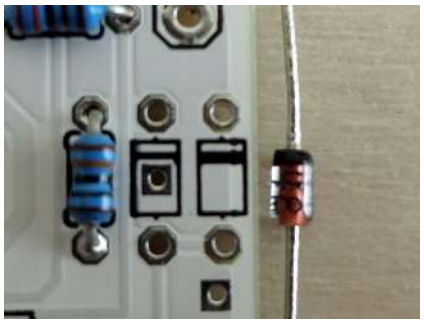
Attention!

Wrong label on the board. The crossed out resistor value at the lower part of the board is 1M.



Your board should look like this (click on the images to enlarge):

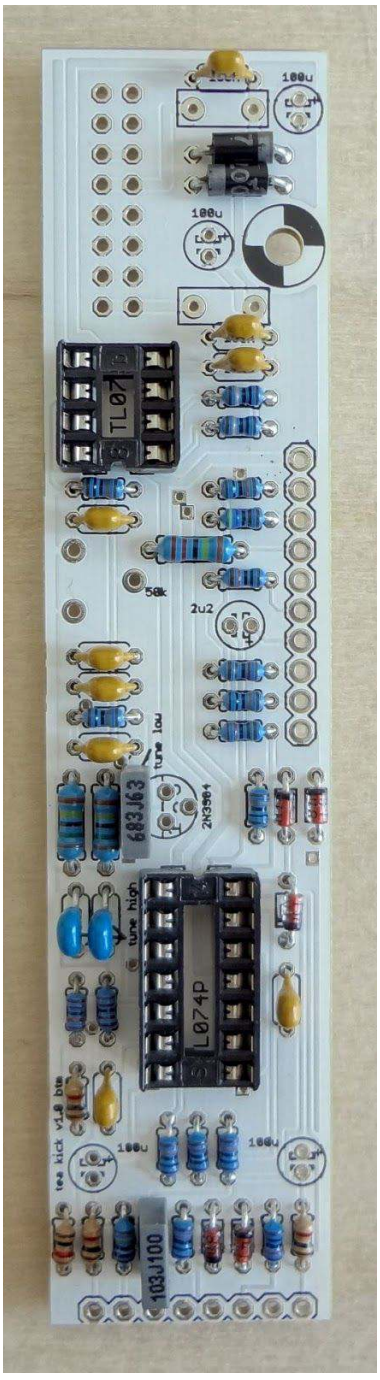




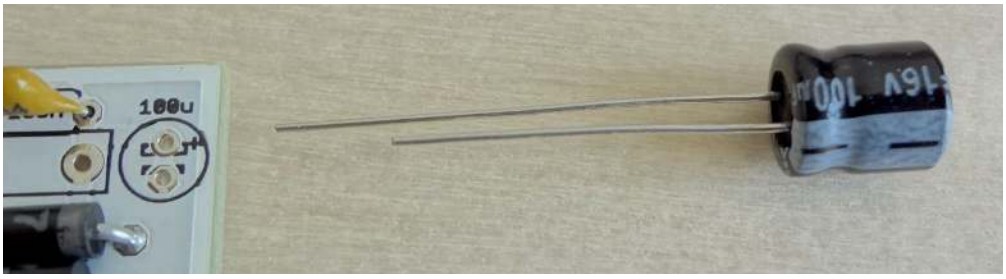
Next populate the board with the diodes and solder them in. Be careful though, diodes are **polarized!** Make sure that the marking ring on the diode body matches the marking on the circuit board.

Do the same with the two bigger power protection diodes.
Then add the capacitors, there are nine 100n capacitors (marked 104), two 6,8n (682) and one 68n (683). They might be in ceramic or polyester film package, don't worry they are not polarized.

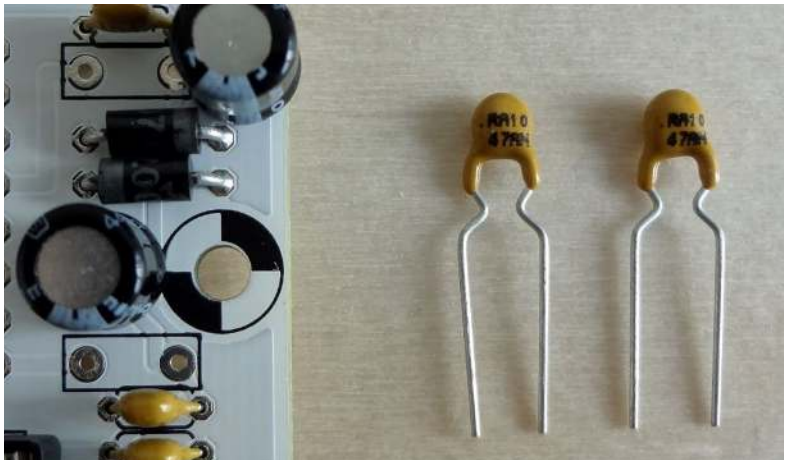
Next place and solder the two chip sockets. Make sure that the notch is in the same direction as printed on the circuit board.
By now your board should look like this:



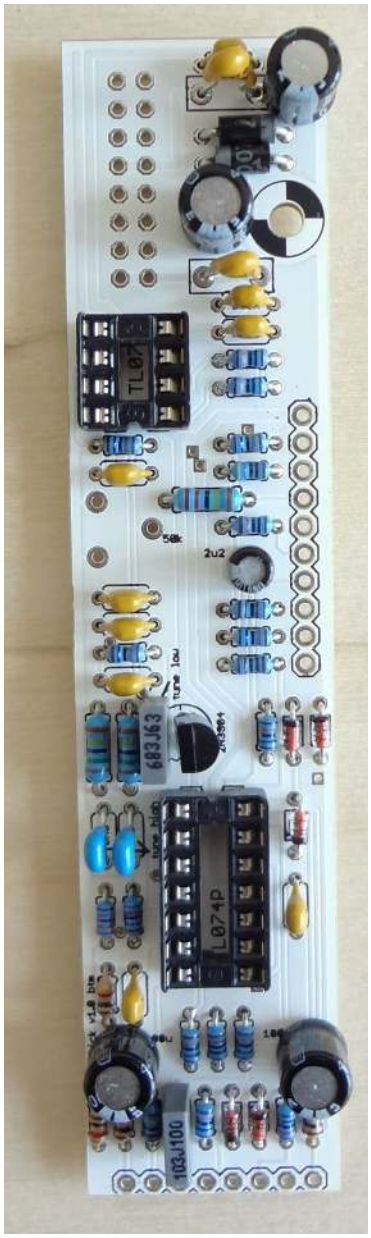
Now, it's time for more capacitors. Take the four 100uF and the 2,2uF capacitors and place them on the board. Be careful, these are **polarized!** capacitors and should be soldered the **right way** in. There is a + marking on the circuit board that should match the long lead of the capacitor, the - side is also marked on the body of the capacitor with a white strip.



Solder those in and move on to the protective fuses. They look quite similar to ceramic capacitors and are placed in the blank rectangular markings on the board.



Next solder in the 2N3304 transistor. You might have to straighten its leads a little bit.
Your board should look like this so far:



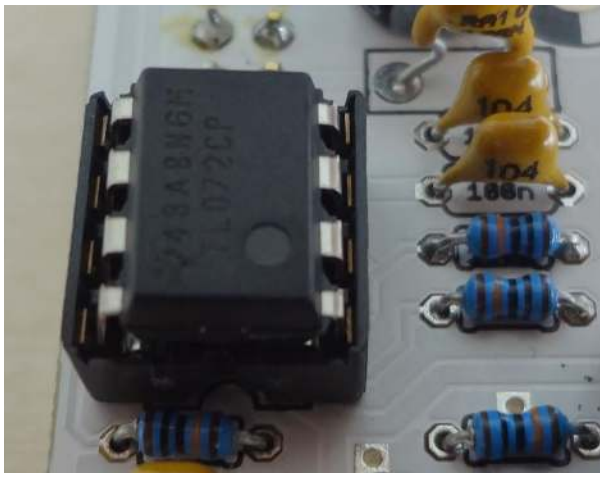
Bottom board back side

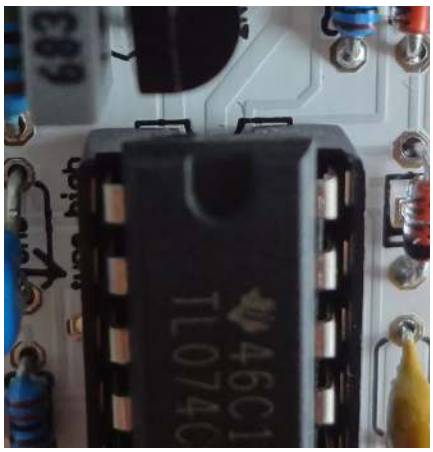
Now solder the 50k trim pot on the back side of the board. We're almost done with this board.

Take the 16 pin power connector and place it also on the back side of the board. It might be tricky to solder it straight, but you can place something like your cutter under the board to hold it level. Also first solder in just one of the pins, then take the board in your hand and re heat that pin while pressing down on the header to align it (be careful though, you don't want to touch the pin you are heating up) wait for it to cool and solder the rest of the pins.

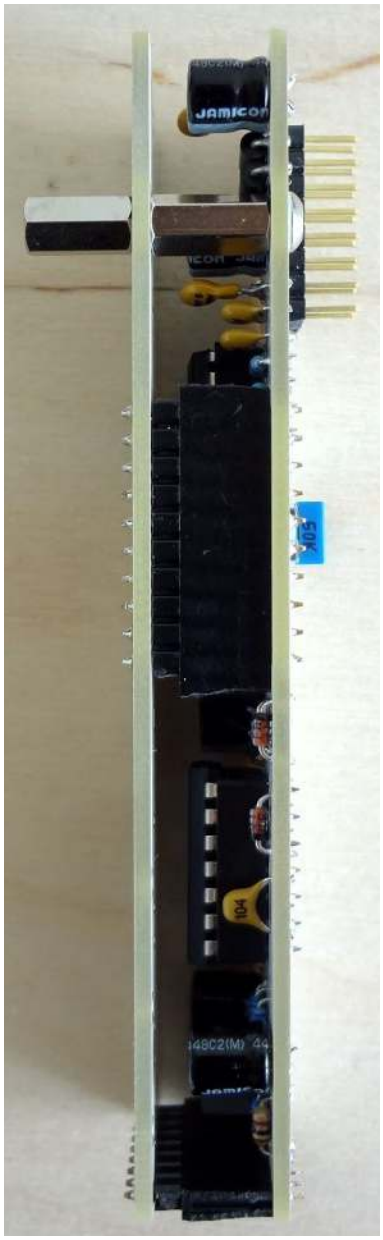
Super mega important!!! Respect chip polarity.

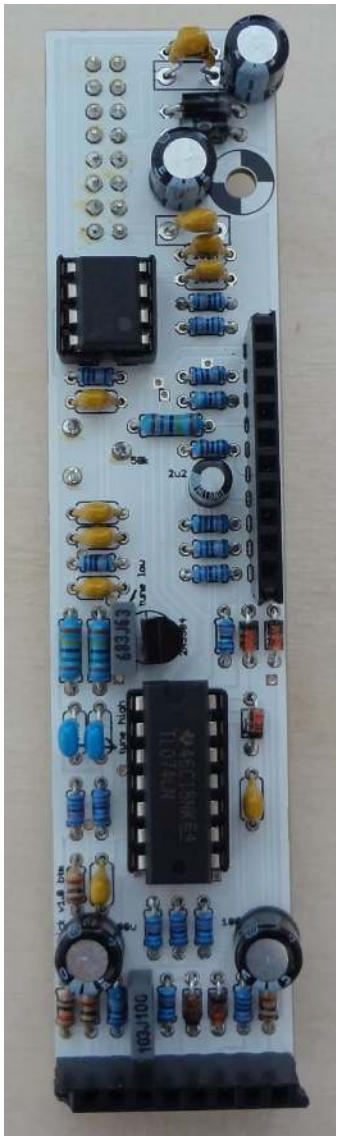
It's time to insert the chips into their sockets. Again make sure that the **notch** on the TL074 chip is **facing the same direction** as the notch on the socket, also the **orientation dot** on the TL072 **facing the notch** on its socket.





Now to ensure that the headers are properly aligned, screw the hex screw and the standoff on bottom board. Place the female headers on button board with the male pins inserted. Now place top board, screw with the standoff screw and finally, solder the headers to both boards. Just like in the image below.





Top board

Now to populate the top board, unscrew the top spacer again and disconnect the two boards.

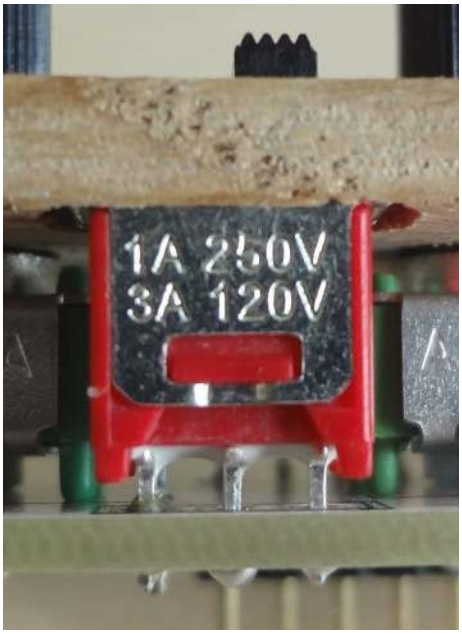
Place the four potentiometers to their respected places on the board (don't forget to read the resistance value of the potentiometer on the side). You may have a two 200k (instead of 100k), that is fine. Push them well until they **sit absolutely flat on the board**, but don't solder them yet.

Next, place the mono jacks on the board, the switch and the LED.

The LED is **polarized** so make sure that the long leg (+) is facing upwards. Also the notch on led and circuit board should match. Still don't solder anything yet.

Again we want to make sure that all the **components are properly aligned** with the front panel, so take the standoff and place it in the opening. Check that all the components came through and then screw the wooden front panel with the second hex screw. Also secure the jacks to the panel with the washers and the nuts.

The switch and the LED **should have some space** off the board, or else they won't come through the panel, like in the image below. Solder the LED, the switch and the rest of the components.

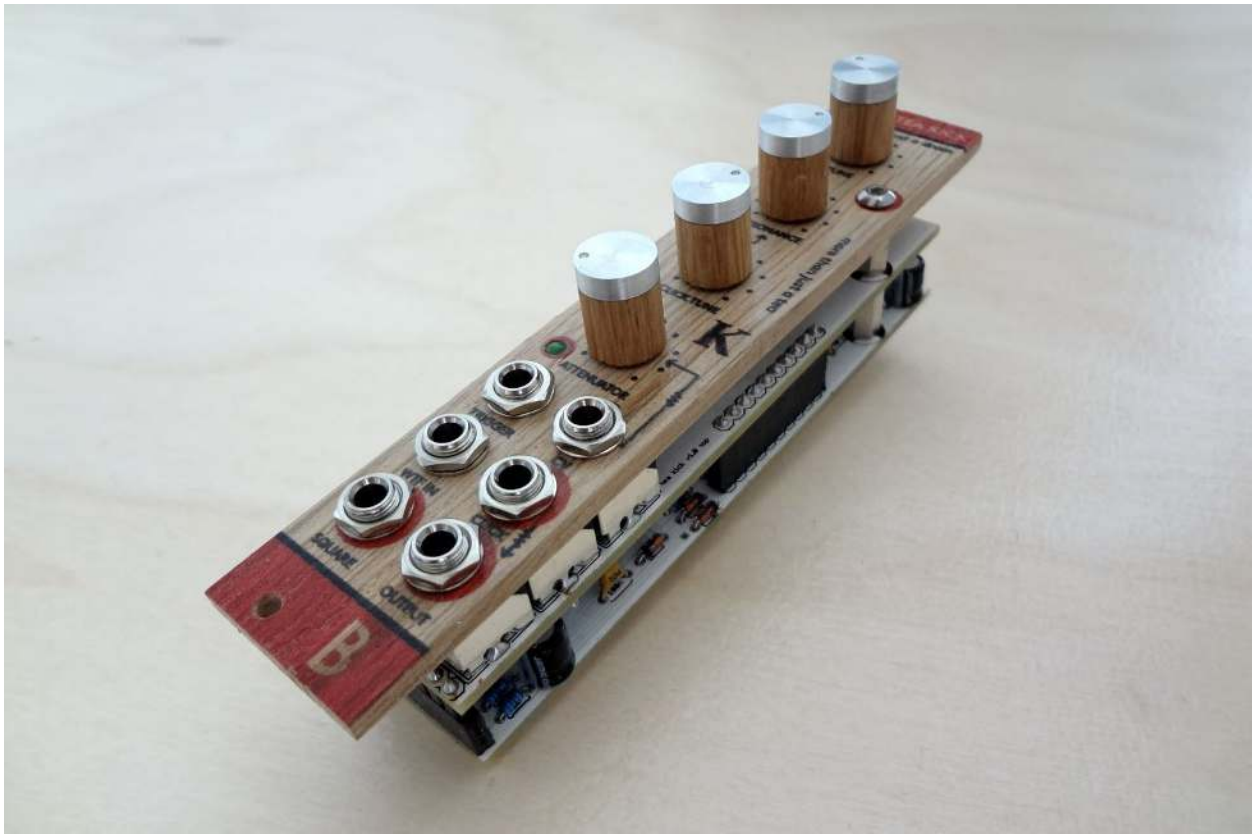


Enclosure assembly

IMPORTANT

Don't tighten the screws and jack washers too much as you may damage them!

Congratulations! You have made it through, now just connect the bottom board, add the knobs and you are ready to enjoy your new module.



Before you connect anything, make sure that your system is disconnected from power. Also double check the polarity of the ribbon cable, the red cable should match the -12V rail both on the module and on the bus board!

Troubleshooting

did you plug it in?

Releases

- 1.0 - Original release.